CLAIMS

1] Assembly comprising a filter housing (20) and at least one filter cartridge (1),

- wherein the at least one filter cartridge (1) is tubular, has a tube wall (3, 4, 5, 6, 8, 10) and a central discharge channel (9) with a discharge connection (12) for discharging filtered medium, wherein the tube wall comprises filter means (5, 6) through which medium to be filtered is able to flow transversely to the tube wall (3, 4, 5, 6, 8, 10);
- wherein the filter housing (20) comprises a filter chamber (35) surrounded by a side wall (22), in which the at least one filter cartridge (1) is accommodated with the longitudinal direction (L) parallel to the side wall (22);
- wherein the filter chamber (35) has at least one outlet (36) per filter cartridge (1) to which the discharge connection (12) of the respective filter cartridge is connected;
- wherein the side wall (22) of the filter chamber is provided with at least one inlet (23) for feeding in the medium to be filtered, which inlet (23) opens into the filter chamber at a level (31) that is traversed by the at least one filter cartridge (1);

characterised in that

viewed in the transverse direction (T) of the filter cartridge (1) and at the level (31) of the inlet (23), the shortest distance (X) from the filter cartridge (1) to the side wall (22) is, viewed in the transverse direction (T) of the filter cartridge (1) and below (33) or above (32) the level (31) of the inlet, greater than the shortest distance (Y) from the filter cartridge (1) to the side wall (22).

2] Assembly according to the preceding claim, characterised in that viewed in the longitudinal direction (L) of the filter cartridge (1), the relative enlargement (X minus Y) of the shortest distance from the filter cartridge (1) to the side wall (22) at the level (31) of the inlet (23) extends over a length (H) of approximately the height (D) of the inlet (23) or more.

3] Assembly according to Claim 1 or 2, characterised in that X is given by:

$$X \geq \tfrac{1}{2}\left(\frac{A}{2Q}\right)$$

where

A = surface area of inlet, and

Q = height of the region with larger shortest distance X.

4] Assembly according to Claim 1 or 2, characterised in that X is given by:

X ≥ surface area of inlet/(twice axial height of inlet).

$$X \geq \left(\frac{A}{2Q}\right)$$

where

A = surface area of inlet, and

Q = height of the region with larger shortest distance X.

5] Assembly according to Claim 3 or 4, wherein the inlet is circular with a diameter D_1 and wherein X is given by $X \geq \frac{1}{2} \frac{\Pi D_1}{8}$, in particular $X \geq \frac{\Pi D_1}{8}$.

6] Assembly according to one of the preceding claims, wherein $A < B(Y)$, preferably $A \leq 2B(Y)$

where:

A = surface area of inlet, and

B = as a function of Y, the surface area of the internal cross-section of the filter housing minus the sum of the cross-sectional surface areas of the filter cartridges at a level above or below the inlet.

7] Assembly according to one of the preceding claims, wherein a single cylindrical filter cartridge is provided that is arranged centrally in the cylindrical filter housing, and where:

$A < \frac{\Pi}{4} (D_3^2 - D_2^2)$, preferably $A \leq \frac{2\Pi}{4} (D_3^2 - D_2^2)$

where

A = surface area of inlet

D_3 = internal diameter of filter housing

D_2 = external diameter of filter cartridge

8] Assembly according to one of the preceding claims, where:

$Y < \frac{\sqrt{A}}{3.5}$, in particular $Y < \frac{\sqrt{A}}{8}$ and preferably $Y < \frac{\sqrt{A}}{25}$,

where

A = surface area of inlet

9] Assembly according to one of the preceding claims, wherein the inlet is circular with diameter D_1; and where

$$Y < 0.75 \left(\frac{D_1}{4}\right),$$

in particular

$$Y < 0.4 \left(\frac{D_1}{4}\right),$$

preferably

$$Y < 0.15 \left(\frac{D_1}{4}\right).$$

10] Assembly according to one of the preceding claims, wherein the filter housing is cylindrical with internal diameter D_3 and, at least conceptually for the purposes of the design, contains a single centrally arranged cylindrical filter cartridge and wherein the inlet is circular with diameter D_1, or at least has a surface area that is equal to a circular surface of diameter D_1, and wherein the following applies for the diameter D_2 of the filter cartridge, D_3 and D_1: $D_1^2 = 2 (D_3^2 - D_2^2)$.

11] Assembly according to one of the preceding claims, wherein:

A ≤ sum of the internal cross-sectional surface areas of the filter cartridges,

where

A = surface area of inlet.

12] Assembly according to one of the preceding claims, characterised in that the enlargement (X minus Y) of the shortest distance from the filter cartridge (1) to the side wall (22) at the level (31) of the inlet (23) has been obtained by constriction (37) of the tube wall (3, 4, 5, 6, 8, 10) at that level.

13] Assembly according to one of the preceding claims, characterised in that the enlargement (X minus Y) of the shortest distance from the filter cartridge (1) to the side wall (22) at the level (31) of the inlet (23) has been obtained by making the side wall (22) recessed at that level (31).

14] Assembly according to one of the preceding claims, characterised in that the tube wall (3, 4, 5, 6, 8, 10) is impermeable to the medium to be filtered in the region (8) where the shortest distance from the filter cartridge to the wall has been enlarged.

15] Assembly according to one of the preceding claims, characterised in that the assembly comprises 3, 4 or more of said filter cartridges (1), which are arranged next to one another, parallel to one another.

16] Assembly according to one of the preceding claims, characterised in that the level (31) of the inlet (23) is located in the region from 25 % to 75 % of the length (H) of the filter cartridge (1).

17] Assembly according to one of the preceding claims, characterised in that the filter means (5, 6) are equipped to filter a medium in the form of a fluid.

18] Assembly according to one of the preceding Claims 1 - 17, characterised in that the filter means (5, 6) are equipped to filter a gaseous medium.

19] Assembly according to one of the preceding claims, wherein the filter cartridge is made as a fine filter on the one side of the inlet and is made as a coarse filter on the other side.

20] Assembly according to Claim 16, wherein the fine filter is at least 5 times finer than the coarse filter.

21] Filter cartridge (1) intended for an assembly according to one of the preceding claims.

22] Filter cartridge (1) as defined in the assembly according to one of the preceding Claims 1 - 10.

23] Diesel engine provided with a fuel filter comprising an assembly (1, 20) or a filter cartridge (1) according to one of the preceding claims.